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EXAMINER	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte AKIO NAGAI, WATARU YAMAUCHI, TORU IWAI

Appeal 2019-000059
Application 14/712,082
Technology Center 3600

Before DANIEL S. SONG, CHARLES N. GREENHUT, and
LEE L. STEPINA, *Administrative Patent Judges.*

STEPINA, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals[2] from the Examiner's decision to reject claims 1–21. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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[1] We use the word Appellant to refer to "applicant" as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Shimano, Inc. Appeal Br. 3.

[2] Appellant presented arguments during a hearing conducted by telephone on April 2, 2020.

CLAIMED SUBJECT MATTER

The claims are directed to a bicycle disc brake rotor.

Claim 1, reproduced below with emphasis added, is illustrative of the claimed subject matter.

> 1. A bicycle disc brake rotor comprising:
> a main body made of a metallic material and including an outer portion, an inner portion and a cooling facilitation part, the outer portion having oppositely facing braking surfaces; and
> a heat release layer formed on a surface of the main body such that the heat release layer at least partially overlies the cooling facilitation part, *the heat release layer including a nonmetallic material* selected from the group consisting of alumite, a phenolic resin, an epoxy resin, an unsaturated polyester resin, a vinyl ester resin, a diallyl phthalate resin, and a polyimide resin.

Appeal Br. 13 (Claims App.).

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Norton	US 1,924,622	Aug. 29, 1933
Takakusagi	US 2003/0089563 A1	May 15, 2003
Iwai	US 2013/0168193 A1	July 4, 2013

REJECTION

Claims 1–21 are rejected under 35 U.S.C. § 103(a) as unpatentable over Iwai, Takakusagi, and Norton.

OPINION

The Examiner finds that Iwai discloses many of the elements recited in claim 1, including a cooling facilitation part (cooling fin 24, fin portions 24a), but does not disclose "a heat release layer that includes a nonmetallic material and that the layer overlies the cooling facilitation part or cooling fins 24, 24a." Final Act. 3. To address this deficiency in Iwai, the Examiner finds "Takakusagi teaches it is known to use resin based coatings to prevent corrosion and reduce vibrations." *Id.*

Appellant argues that the epoxy resin disclosed by Takakusagi contains aluminum zinc phosphomolybdate, and, therefore, fails to qualify as a "non-metallic" material as required by claim 1. Appeal Br. 9 (citing Takakusagi, Abstract, Spec. ¶¶ 6, 10).

In response, the Examiner states:

> The Publication to [Takakusagi] also teaches a brake rotor but with the hub 6 covered with a rust preventive epoxy resin based paint . . . Appellant's open ended language/limitation of "the heat release layer **including** a non-metallic material selected from the group consisting of ..." does not preclude the use of metallic materials. Therefore the aforesaid limitation in [A]ppellant's independent claims does not overcome the combined teachings of the layer in Takakusagi and Norton.

Ans. 7. Thus, the Examiner determines that the heat release layer recited in claim 1 may include metal.

Appellant replies that the Examiner's response does not fully address the argument because the proposed combination of the teachings of Iwai and Takakusagi fails to provide a non-metallic material as required by claim 1. *See* Reply Br. 3–4.

Although we agree with the Examiner that claim 1 does not preclude the use of metal in the heat release layer, Appellant has the better position

because claim 1 explicitly requires a non-metallic material in the heat release layer. The Examiner has not established by a preponderance of the evidence that a person of ordinary skill in the art would consider the epoxy resin disclosed by Takakusagi to be a non-metallic material. To the extent that the Examiner relies on Takakusagi's epoxy resin, *as a whole*, as a teaching of non-metallic material, Appellant's identification of aluminum zinc phosphomolybdate in Takakusagi's epoxy resin (Appeal Br. 9) substantially undermines (albeit not conclusively), any finding that the epoxy resin of Takakusagi qualifies as non-metallic.[3]

To the extent that the Examiner relies on the *portion* of Takakusagi's epoxy resin that is not aluminum zinc phosphomolybdate to meet the requirement in claim 1 for a non-metallic material, this interpretation of "non-metallic" is unreasonably broad. Such an interpretation would mean that providing any material that includes a constituent component that is not metal, i.e., providing anything other than completely *pure* metal, amounts to providing a non-metallic material.

Accordingly, we do not sustain the Examiner's rejection of claim 1, and claims 2–14 and 17–21 depending therefrom, as unpatentable over Iwai, Takakusagi, and Norton. Claims 15 and 16 independently also recite the limitation discussed above regarding claim 1, and the Examiner relies on the same findings of fact in rejecting these claims. *See* Appeal Br. 15–16 (Claims App.); Final Act. 3–4. Accordingly, we do not sustain the rejection of claims 15 and 16 as unpatentable over Iwai, Takakusagi, and Norton.

[3] For example, it is unlikely that a person of ordinary skill in the art would consider rum or vodka to be non-alcoholic liquids despite the fact that alcohol comprises only 40% of their volumes.

CONCLUSION

The Examiner's rejections are reversed.

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
1–21	103(a)	Iwai, Takakusagi, Norton		1–21

REVERSED